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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,822	04/20/2006	Roy H Hammerstedt	6077-052204	8352

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EXAMINER

BASS, DIRK R

ART UNIT	PAPER NUMBER
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1777

MAIL DATE	DELIVERY MODE
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02/28/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/542,822	Applicant(s) HAMMERSTEDT ET AL.	
	Examiner DIRK BASS	Art Unit 1777	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's response filed December 29, 2010 is acknowledged. Applicant's affidavit filed December 29, 2010 is acknowledged. Claims 1-6 are pending and further considered on the merits.

Response to Amendment

In light of applicant's amendment, the examiner maintains the grounds of rejection set forth in the office action dated September 1, 2010.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. **Claims 1-3** are rejected under 35 U.S.C. 102(a) as being anticipated by Allcock et al., USPA 2002/0088748 (Allcock).

3. Regarding claims 1-3, Allcock discloses that it is well known to alter the properties of capillary pore membranes to include active and/or ionic moieties via carboxyl groups inherent within said capillary pores using any chemical procedure, thereby forming a configured separation membrane (§ 0010-0011).

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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5. **Claims 4-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Allcock in view of Takenishi et al., US 6017742 (Takenishi) (already of record).

6. Regarding claim 5, Allcock fails to disclose a method wherein a carbodiimide reaction is used to accomplish said alteration of said membrane by linkage of a molecule, particle, or unit of matter containing an amine group or thiol group with said endogenous carboxyl groups.

7. Takenishi discloses utilizing carbodiimide derivatives to perform a condensation reaction between carboxylic acid and an amine group or thiol group (col. 5, l. 8-11) to immobilize biologically active substances (see abstract).

8. At the time of the invention, it would have been obvious to one skilled in the art to combine the carbodiimide reaction of Takenishi with the method of Allcock in order to immobilize biologically active substances utilized for further separation or analysis techniques.

9. Regarding claim 6, Allcock fails to disclose a method wherein the endogenous carboxyl groups are reacted to form anhydrides.

10. Takenishi discloses carboxyl groups being reacted to form anhydrides (col. 2, l. 64-66) to immobilize biologically active substances (see abstract).

11. At the time of the invention, it would have been obvious to one skilled in the art to combine the formation of anhydrides step of Takenishi with the method of Allcock in order to immobilize biologically active substances utilized for further separation or analysis techniques.

Response to Arguments

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12. Applicant's arguments filed December 29, 2010 have been fully considered but they are not persuasive.

13. In the affidavit filed December 29, 2010, applicant's state that "Together, we conceived of the subject matter mentioned in paragraphs [0010-0011] of US '748". For reference, paragraphs 0010-0011 of USPA 2002/0088748 state the following:

[0010] Inherent to the manufacture of capillary-pore membranes is extensive introduction of charges on the face of the tunnel or passageway, with minimal formation of charges on the general polymer faces. This is because capillary-pore membranes are produced by physically damaging polymer film in a controlled manner with a beam of heavy ions (e.g., krypton) in a cyclotron. The ions follow a linear path where interaction with polymer chains of the membrane releases energy to damage molecules in the polymer matrix. Damage represents latent pores, which subsequently are opened by chemical etching, such as with cyclical treatment with alkaline and acid solutions. Specifically, carboxyl functions may be formed with etching treatments such as these.

[0011] Literature on track etching and production and use of capillary-pore membranes reveals that it is known to track-etch thin sheets of solids; that coating pores with fatty acid monolayers or non-specific adsorbed proteins can be used to change pore properties; and that certain polymers such as cellulose polymers are very sensitive to environmental conditions so that quality of track images in cellulose polymers depends on how the material was prepared. In addition, it is also known that in order to create carboxyl functionality during track-etching, oxygen must be present, and in instances in which chemically active and/or ionic groups are desired to be attached to pores in order to mediate pore permeability, tunnels in capillary-pore membranes are well suited to promote attachment of such chemically active and/or ionic groups.

14. Therefore, the examiner considers the affidavit to posit that:

- a. Applicants conceived the concept of capillary pore membranes having charges introduced in the pores during manufacture, wherein said charges are carboxyl groups; and

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b. Applicants conceived the concept of applying proteins or fatty acids to capillary pore membranes to alter pore properties.

15. However, the examiner notes that carboxyl functionalities are known to be produced during the manufacture of track-etched capillary pore membranes as seen in paragraph 0010 of the prior art as well as applicant's own disclosure. The modification of track-etched membranes with functionalities such as fatty acids is also well known as disclosed by Quinn et al. (1972) (last paragraph, pg. 991). Therefore, the examiner considers the affidavit to be insufficient in overcoming the prior art, since the information relied upon by the examiner has clearly been shown to exist in the prior art, and that applicant's submission of conception of the elements disclosed in paragraphs 0010-0011 is negated by evidence showing that such concepts existed prior to the invention claimed in the current application.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Thorp et al., US 5968745.

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIRK BASS whose telephone number is (571) 270-7370. The examiner can normally be reached on Mon - Fri (9am-4pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571) 272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Krishnan S Menon/
Primary Examiner, Art Unit 1777

/DRB/
Dirk R. Bass